

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Revision of the Commission's Rules to)	CC Docket No. 94-102
Ensure Compatibility With Enhanced 911)	
Emergency Calling Systems)	
)	
Amendment of Parts 2 and 25 to Implement the)	IB Docket No. 99-67
Global Mobile Personal Communications by)	
Satellite (BMPCS) Memorandum of)	
Understanding and Arrangements, Petition of the)	
National Telecommunications and Information)	
Administration to Amend Part 25 of the)	
Commission's Rules to Establish Emissions)	
Limits for Mobile and Portable Earth Stations)	
Operating in the 1610-1660.5 MHz Band)	

To: The Commission

COMMENTS

Mobex Network Services, LLC (Mobex) hereby submits its Comments in the above captioned matter. In support of its position, Mobex shows the following.

Mobex is one of only three licensees of Automated Maritime Telecommunications Systems (AMTS) in the United States. Mobex provides AMTS service to the Mississippi River System, the Gulf Intracoastal Waterway, the Atlantic Coast, the Pacific Coast, the Great Lakes, and the Erie Canal.

The Commission's standard for whether a CMRS carrier should be subject to basic or enhanced 911 requirements is whether the carrier (1) offers real-time, two-way switched voice

service, interconnected with the public switched network, either on a stand-alone basis or packaged with other telecommunications services; (2) has customers which clearly expect access to 911 and E911; (3) competes with analog and broadband PCS providers; and (4) where it is technically and operationally feasible to provide enhanced 911 service, Further Notice of Proposed Rule Making (FNPRM) in the above captioned matter (FCC 02-326 Released December 20, 2002) at para. 4. With respect to VHF Public Coast station service, the Commission has based its determination on whether the carrier “offers land-based real-time two-way switched voice service that is interconnected to the public switched network,” FNPRM at para. 107. Under either formulation of the standard, Mobex is not required to meet basic or enhanced 911 requirements because Mobex does not use an internal switch which provides the capability of handoff of calls between coast stations. Mobex has no intention of modifying its system to provide handoff between coast stations. Therefore, Mobex fails the first element of the Commission’s test. Nevertheless, Mobex will explain why AMTS fails all four elements of the Commission’s test and why the Commission should not apply any 911 requirement to AMTS.

AMTS Customers Have No Expectation of 911 Service

More than 95 percent of Mobex AMTS subscribers are operators of commercial maritime vessels on inland waterways or in coastal waters. Those vessels are compulsorily equipped with VHF Maritime radios. Their proper point of emergency contact is with the Coast Guard and they do not rely on Mobex to carry emergency communications. Land users are not only a small percentage of Mobex subscribership, but also their number is minuscule

in comparison to the number of subscribers of even a small cellular system. Mobex land users are clearly informed at the point of subscription that they cannot expect 911 service. So long as Mobex continues so to inform land users at the point of subscription, they will have no expectation of access to 911 or E911. Because AMTS subscribers have no expectation of access to 911 and E911, AMTS fails the second element of the Commission's test.

Mobex Does Not Compete with Covered Providers

Mobex uses high-power narrow-band FM VHF radios for its AMTS service. The cost of providing a ribbon system along thinly populated areas with only a limited universe of potential maritime subscribers is much higher than the cost of providing cellular, PCS, or covered SMR service to a major city. Accordingly, Mobex's charges to inland waterways subscribers are already substantially higher than cellular service charges to consumers in urbanized areas.

AMTS end user handsets are already, necessarily, significantly larger than handsets used by cellular, PCS or covered SMR operators. The technical requirements of an integrated GPS receiver are significant not only to incumbent AMTS systems, but to the competitive potential of AMTS when licensed on a geographic area basis. If there is no hope of attracting land based consumers with an ungainly, oversized handset, there is no point to the Commission's requiring the provision of a 911 service which will not be used. If an AMTS licensee cannot reasonably be expected to compete with analog and broadband PCS providers, then AMTS cannot pass the third element of the Commission's test quoted above.

E911 Service is Technically and Operationally Infeasible for AMTS to Provide

The economics of inland and coastal maritime service dictate the use of large cells.¹ To provide affordable service to the maritime public, an AMTS operator must separate towers as far from one another as possible. Mobex's system is necessarily a large cell system with a ribbon configuration which provides "thin route" service. Because commercial towers were not available to provide the required service, Mobex's predecessor had to construct 50 towers along the Mississippi River System and the Gulf Intracoastal Waterway. None of Mobex's systems is designed with clusters of coast stations which could ascertain the location of a mobile unit by triangulation or trilateration and it would economically infeasible to reconfigure the system by trebling the number of coast stations.

Because the Mobex system cannot locate a user by triangulation or trilateration, the only means by which a user could be located automatically would be by the addition of Global Positioning System equipment to the system. To provide GPS location information to a Public Safety Answering Point, Mobex would have to, at a minimum, obtain and replace end user equipment, revise its air signaling protocols, install additional coast station computing equipment and revise existing software, install a new telephone system at each coast station, and install interstate private lines to a multiplicity of PSAPs.

¹ Exhibit 1 contains maps of the coverage of some Mobex stations.

Based upon discussions with Motorola, Mobex believes that it cannot obtain AMTS handsets which incorporate GPS positioning. If it could, the handsets would not be price competitive with cellular, PCS, and covered SMR handsets and would attract no land users. Motorola would not be interested in providing the required handsets and does not believe that any other manufacturer would be interested, either.

Among the reasons cited by Motorola are 1) The AMTS allocation of 2 MHz of spectrum cannot support a sufficient number of end users to justify the cost of development of a new handset incorporating GPS technology; 2) the RF duplexer filter components at 220 MHz are substantially larger than the filter components above 800 MHz and a unit with adequate filtering and GPS would have to be so large as not to be acceptable to consumers; 3) the cost of adding GPS to an AMTS handset would be so great that AMTS handsets could not compete with handsets used by other carriers; and 4) addition of GPS would cut battery life by as much as 90 percent.

Motorola's first point is determinative. Motorola has orally informed Mobex that if Mobex desired for Motorola to develop a new GPS equipped handset, Mobex would have to pay the full estimated cost in advance. Because that cost is proprietary information, Mobex is not disclosing it here. It is enough to say that Mobex cannot afford that upfront cost.

Motorola's second point is significant not only to incumbent AMTS systems, but to the competitive potential of AMTS when licensed on a geographic area basis. If an AMTS

licensee cannot reasonably be expected to compete with analog and broadband PCS providers, then AMTS cannot pass the third element of the Commission's test quoted above.

Motorola's third point is especially significant to Mobex. Mobex is simply not financially positioned to subsidize the cost of a handset to attract users to its service. The subscriber must pay the full price of the handset at the time of subscription.

The impracticality of the equipment industry's producing a competitive GPS-equipped AMTS handset makes AMTS unable to pass the fourth element of the Commission's test.

Cost, standing alone, might not be a deciding factor in whether to require 911 and E911 service. However, cost to provide service to units on land must be taken into account when it could impair or destroy the underlying maritime radio communications service.

Mobex estimates that equipping its system to provide location fixes by GPS would cost at least \$10,000 per current subscriber, assuming that the costs were spread across both land and maritime users. However, on a cost accounting basis, allocating the cost to maritime subscribers would not be reasonable, since they do not need 911 service and are likely to be better served by the Coast Guard. Also, there would be a question of fairness were the cost to be passed on to maritime subscribers in the form of price increases. On the other hand, were the cost to be allocated only to land subscribers, Mobex would have to charge so much for service to land units that it would be unlikely to attract any land subscriber and Mobex would

be stuck with bearing all of the cost of constructing and operating a 911 service which no one needed or used.

Were Mobex to increase its charges to maritime subscribers to cover the cost of a service which they do not require, the price increase would cause sufficient loss of maritime customers to force Mobex to discontinue AMTS service altogether. Mobex simply is not financially positioned to subsidize the cost of a handset to attract users to its service. Because it is technically and operationally infeasible to provide 911 or E911 service, AMTS fails the final element of the Commission's test. The impracticality of the equipment industry's producing a competitive GPS-equipped AMTS handset makes AMTS unable to pass the fourth element of the Commission's test.

PSAP Boundaries and Large Cell Systems are Incompatible

The reporting to a PSAP of a geographic fix on a maritime emergency may be worse than useless because there is a distinct difference between emergencies ashore and those on the water. An automobile accident does not move. A victim of illness ashore remains stationary. Marine vessels, especially disabled vessels, float with the current and with the vagaries of winds. A maritime emergency may arise in one public safety jurisdiction, but the vessel may no longer be within that jurisdiction when help arrives. Because of the large size of Mobex

cells, a user is not necessarily in the same jurisdiction as the PSAP which serves the coast station site.

The Commission's 911 rules and policies are, quite reasonably, based on the provision of PSAPs by either local jurisdictions or state governments. With the exception of federal Coast Guard services, public safety services are organized by local and state governments, each of which has geopolitical boundaries to its jurisdiction and its responsibility. The PSAP system was devised to route emergency calls to the correct first responder. As the Commission must know, it is not uncommon for public safety agencies to refuse to accept the risk of responding to calls outside of their boundaries and it is not uncommon for a public safety agency to decline to cross a boundary when it arrives on the scene and learns that an emergency is not within its jurisdiction.

Of the nation's 38 largest urban areas, 11 either span a river into two or more states or have a coastal exposure which spans a state boundary. Most Mobex coast stations provide coverage to two or more states and all provide service to more than one city, county or parish. The Mississippi and the Ohio Rivers which Mobex serve constitute the boundaries of 13 adjacent states. Mobex's Portland, Oregon station covers parts of two states which are bounded by a river. Its New York City station has coverage within two states, separated by a river. Mobex's Connecticut system reaches into Long Island Sound, which contains the boundary between two states. Mobex's Chicago station provides service in two Lake Michigan states. Its Philadelphia station serves portions of two states, divided by a river.

Mobex's District of Columbia station reaches into three jurisdictions, the boundaries of which are defined by a river. The list could be extended, but it is sufficient to illustrate the problem.

Various river states define their boundaries in various ways. In some cases, the boundary between states is the middle of the river or at the deepest part of the river. In other cases, the river is entirely included within one state. In coastal areas, the boundary between states can be indefinite. In sum, along an inland waterway or a coast, it is extraordinarily difficult to ascertain the correct destination for an emergency call, because of the large number of state/state boundaries, because of the large number of county and municipal boundaries, and because a vessel may not be able to maintain its location, either along the waterway or across it. Consequently, not only may there be no value to directing a maritime emergency call to a PSAP, but misplaced reliance on a call to a PSAP may lead the victim of a maritime emergency not to take the self-protective steps appropriate to a changing situation.

Conclusion

For all the foregoing reasons, because AMTS fails all of the Commission's tests for whether 911 and E911 requirements should be applied, the Commission should not impose a 911 or E911 requirement on AMTS.

Respectfully submitted,
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